I. AMENDMENTS

IN THE CLAIMS

Please enter the amendments to claims 10 and 23, as shown below.

Please enter new claims 34-39, as shown below.

1. (Canceled)

2. (Previously presented) A polynucleotide composition comprising a nucleic acid encoding a plant allergen derived from a non-host species of a first phylum or first kingdom, wherein the nucleic acid encoding the plant allergen is further modified to include a signal sequence derived from a second phylum or second kingdom, wherein the signal sequence is operably linked to the allergen-encoding sequence.

3. (Previously presented) The polynucleotide composition of claim 2, wherein the signal sequence comprises a hemagglutinin A (HA) signal sequence.

4. (Previously presented) The polynucleotide composition of claim 2, wherein at least one codon of the nucleic acid encoding the plant allergen is modified from a wild type sequence of the non-host species to an analogous codon of a host species.

5. (Previously presented) The polynucleotide composition of claim 2, further comprising a universal antigen or an immunogenic fragment thereof.

6. (Canceled)

7. (Previously presented) The polynucleotide composition of claim 2, wherein the antigen is Amb a1.

8-9. (Canceled)

10. (Currently Amended) A method for reducing a Th2 immune response to a plant allergen in a mammalian subject, comprising co-administering ~~administering~~ to [[a]] the mammalian subject an effective amount of a polynucleotide composition of claim 2 and an effective amount of an immunostimulatory nucleotide sequence (ISS) comprising an unmethylated 5'-CG-3' nucleotide sequence to reduce a Th2 immune response to the allergen.

11-13. (Canceled)

14. (Previously presented) The method of claim 10, wherein the plant allergen is ragweed or grass pollen.

15-19. (Canceled)

20. (Previously presented) The method of claim 10, wherein the ISS comprises a sequence selected from the group consisting of: 5'-rrcgyy-3', 5'-rycgyy-3', 5'-rrcgyycg-3', 5'-rycgyycg-3' and 5'-(TCG)n-3'.

21. (Previously presented) The method of claim 20, wherein the sequence is AACGTT.

22. (Canceled)

23. (Currently Amended) A ~~polynucleotid~~ polynucleotide composition comprising a nucleic acid encoding an Amb a1 allergen modified by deletion of a native Amb a1 signal sequence, wherein the nucleic acid encoding the Amb a1 allergen is further modified to comprise a heterologous signal sequence operably linked to the Amb a1 allergen-encoding sequence.

24. (Previously presented) The polynucleotide composition of claim 23, wherein the heterologous signal sequence comprises a hemagglutinin A (HA) signal sequence.

25. (Previously presented) The polynucleotide composition of claim 23, wherein at least one codon of the nucleic acid sequence encoding the Amb a1 allergen is modified from a wild type sequence of the Amb a1 allergen to an analogous human codon.

26. (Canceled)

27. (Previously presented) A polynucleotide composition comprising:

a polynucleotide comprising a nucleic acid sequence encoding plant allergen derived from a first phylum or first kingdom, wherein the nucleic acid sequence encoding the plant allergen is modified by deletion of a native signal sequence; and

an immunomodulatory nucleic acid molecule comprising the sequence 5'-cytosine-guanine-3', wherein the nucleic acid sequence encoding the plant allergen is further modified to include a heterologous signal sequence derived from a second phylum or second kingdom, wherein the signal sequence is operably linked to the antigen-encoding sequence.

28. (Previously presented) The polynucleotide composition of claim 27, wherein the heterologous signal sequence comprises a hemagglutinin A (HA) signal sequence.

29. (Previously presented) The polynucleotide composition of claim 27, wherein at least one codon of the nucleic acid sequence encoding the plant allergen is modified from a wild type sequence of the non-host species to an analogous codon of a host species.

30. (Previously presented) The polynucleotide composition of claim 27, wherein the plant allergen is Amb a1.

31. (Previously presented) The polynucleotide composition of claim 27, wherein the immunomodulatory nucleic acid molecule comprises a sequence selected from the group consisting of 5'-rrcgyy-3', 5'-rycgyy-3', 5'-rrcgyycg-3', 5'-rycgyycg-3' or 5'-(TCG)n-3'.

32. (Previously presented) The polynucleotide composition of claim 27, wherein the immunomodulatory nucleic acid molecule comprises the sequence AACGTT.

33. (Previously presented) The method of claim 10, wherein the level of IgE specific for the plant allergen is reduced.

34. (New) A polynucleotide composition comprising a nucleic acid encoding a plant allergen derived from a non-host species of a first phylum or first kingdom, wherein the nucleic acid encoding the plant allergen is further modified to include a signal sequence comprising a hemagglutinin signal sequence, wherein the signal sequence is operably linked to the allergen-encoding sequence.

35. (New) The polynucleotide composition of claim 34, wherein at least one codon of the nucleic acid sequence encoding the plant allergen is modified from a wild type sequence of the plant allergen to an analogous human codon.

36. (New) A polynucleotide composition comprising:

a) a nucleic acid encoding a plant allergen derived from a non-host species of a first phylum or first kingdom, wherein the nucleic acid encoding the plant allergen is further modified to include a signal sequence derived from a second phylum or second kingdom, wherein the signal sequence is operably linked to the allergen-encoding sequence; and

b) a universal antigen or an immunogenic fragment thereof.

37. (New) A polynucleotide composition comprising a nucleic acid encoding an Amb a1 allergen modified by deletion of a native Amb a1 signal sequence, wherein the nucleic acid encoding the Amb a1 allergen is further modified to comprise a hemagglutinin signal sequence operably linked to the Amb a1 allergen-encoding sequence.

38. (New) The polynucleotide composition of claim 37, wherein at least one codon of the nucleic acid sequence encoding the Amb a1 allergen is modified from a wild type sequence of the Amb a1 allergen to an analogous human codon.

39. (New) A polynucleotide composition comprising a nucleic acid encoding an Amb a1 allergen modified by deletion of a native Amb a1 signal sequence, wherein the nucleic acid encoding the Amb a1 allergen is further modified to comprise a heterologous signal sequence operably linked to the Amb a1 allergen-encoding sequence, and wherein at least one codon of the nucleic acid sequence encoding the Amb a1 allergen is modified from a wild type sequence of the Amb a1 allergen to an analogous human codon.